

U.S. ATLAS M&O Estimate

WBS Profile Estimates

Funding	All	Funding Type:	Management Reserve									2/1/2004 11:16:58 AM
Institution	All		Estimate in Fixed FY'04 \$k					Labor/Material: Both				
WBS Number	Description		FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3	U.S. ATLAS M&O Estimate		0	1315	1431	905	1041	373	0	0	0	0
3.1	Silicon		0	118	99	181	133	0	0	0	0	0
3.1.1	Pixels		0	0	0	60	72	0	0	0	0	0
3.1.1.1	Pre-operations		0	0	0	60	57	0	0	0	0	0
3.1.1.1.1	SR Building Facilities		0	0	0	0	0	0	0	0	0	0
3.1.1.1.2	Mechanical support		0	0	0	24	0	0	0	0	0	0
3.1.1.1.3	Electrical support		0	0	0	35	57	0	0	0	0	0
3.1.1.1.4	Software support		0	0	0	0	0	0	0	0	0	0
3.1.1.1.5	Physicist support		0	0	0	0	0	0	0	0	0	0
3.1.1.2	Operations		0	0	0	0	15	0	0	0	0	0
3.1.1.2.1	Mechanical Support		0	0	0	0	15	0	0	0	0	0
3.1.1.2.2	Electrical Support		0	0	0	0	0	0	0	0	0	0
3.1.1.2.3	Software support		0	0	0	0	0	0	0	0	0	0
3.1.1.2.4	Physicist support		0	0	0	0	0	0	0	0	0	0
3.1.1.3	Maintenance		0	0	0	0	0	0	0	0	0	0
3.1.1.3.1	Mechanical support		0	0	0	0	0	0	0	0	0	0
3.1.1.3.2	Electrical support		0	0	0	0	0	0	0	0	0	0
3.1.1.3.3	Software support		0	0	0	0	0	0	0	0	0	0

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3.1.1.3.4	Physicist support	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5	Spares	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5.1	Mechanics/Services	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5.2	Sensors	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5.3	Electronics	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5.4	Hybrids	0	0	0	0	0	0	0	0	0	0
3.1.1.3.5.5	Modules	0	0	0	0	0	0	0	0	0	0
3.1.2	SCT	0	118	0	121	62	0	0	0	0	0
3.1.2.1	Pre-operations	0	0	0	121	0	0	0	0	0	0
3.1.2.1.1	Preoperations - LBNL	0	0	0	0	0	0	0	0	0	0
3.1.2.1.2	Preoperations - UCSC	0	0	0	121	0	0	0	0	0	0
3.1.2.1.3	Preoperations - SR	0	0	0	0	0	0	0	0	0	0
3.1.2.2	Operations	0	0	0	0	22	0	0	0	0	0
3.1.2.2.1	LBNL	0	0	0	0	0	0	0	0	0	0
3.1.2.2.2	UCSC	0	0	0	0	22	0	0	0	0	0
3.1.2.2.3	SR building/CERN	0	0	0	0	0	0	0	0	0	0
3.1.2.3	Maintenance	0	118	0	0	39	0	0	0	0	0
3.1.2.3.1	Spares	0	118	0	0	0	0	0	0	0	0
3.1.2.3.1.2	Hybrid Assembly/Test	0	44	0	0	0	0	0	0	0	0
3.1.2.3.1.2.1	Hybrid Assembly/Test -LBNL	0	18	0	0	0	0	0	0	0	0
3.1.2.3.1.2.2	Hybrid Assembly/Test - UCSC	0	26	0	0	0	0	0	0	0	0
3.1.2.3.1.3	Module Assembly/Test	0	74	0	0	0	0	0	0	0	0
3.1.2.3.1.3.1	Module Assembly/Test - LBNL	0	67	0	0	0	0	0	0	0	0
3.1.2.3.1.3.2	Module Assembly/Test - UCSC	0	7	0	0	0	0	0	0	0	0

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3.1.2.3.2	Manpower/materials	0	0	0	0	39	0	0	0	0	0
3.1.3	RODs	0	0	99	0	0	0	0	0	0	0
3.1.3.1	Pre-operations	0	0	0	0	0	0	0	0	0	0
3.1.3.1.1	Wisconsin	0	0	0	0	0	0	0	0	0	0
3.1.3.1.2	LBNL	0	0	0	0	0	0	0	0	0	0
3.1.3.1.3	Iowa State	0	0	0	0	0	0	0	0	0	0
3.1.3.2	Operations	0	0	0	0	0	0	0	0	0	0
3.1.3.2.1	Wisconsin	0	0	0	0	0	0	0	0	0	0
3.1.3.2.2	LBNL	0	0	0	0	0	0	0	0	0	0
3.1.3.2.3	Iowa State	0	0	0	0	0	0	0	0	0	0
3.1.3.3	Maintenance	0	0	99	0	0	0	0	0	0	0
3.1.3.3.1	Spares	0	0	99	0	0	0	0	0	0	0
3.1.3.3.2	Personnel/materials	0	0	0	0	0	0	0	0	0	0
3.1.4	Common Silicon/ID	0	0	0	0	0	0	0	0	0	0
3.1.4.1	Pre-operations	0	0	0	0	0	0	0	0	0	0
3.1.4.2	Maintenance Operations	0	0	0	0	0	0	0	0	0	0
3.2	TRT	0	295	243	114	0	0	0	0	0	0
3.2.1	TRT-Subsystem	0	295	243	114	0	0	0	0	0	0
3.2.1.1	TRT Pre-operations	0	295	243	114	0	0	0	0	0	0
3.2.1.1.1	Module Check(7/02-12/04	0	127	0	0	0	0	0	0	0	0
3.2.1.1.1.1	Technical support (Duke)	0	64	0	0	0	0	0	0	0	0
3.2.1.1.1.2	equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.2.1	gas leak tester	0	0	0	0	0	0	0	0	0	0

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3.2.1.1.1.2.2	multi channel tension	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.2.3	HV breakdown test	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.2.4	gain mapper	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.2.5	HV training supplies, cables	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.2.6	storage and support	0	0	0	0	0	0	0	0	0	0
3.2.1.1.1.3	other technical support	0	63	0	0	0	0	0	0	0	0
3.2.1.1.4	TRT-6 mod-check (2/04- 1/05)	0	168	131	47	0	0	0	0	0	0
3.2.1.1.4.1	technical support (Kline)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.4.2	other technical support	0	0	31	0	0	0	0	0	0	0
3.2.1.1.4.3	project engineer(Callahan)	0	69	0	0	0	0	0	0	0	0
3.2.1.1.4.4	electronics technician(C.	0	0	0	0	0	0	0	0	0	0
3.2.1.1.4.5	Electronics tech- Yale	0	99	99	47	0	0	0	0	0	0
3.2.1.1.4.9	HV distribution	0	0	0	0	0	0	0	0	0	0
3.2.1.1.4.10	Low Voltage system	0	0	0	0	0	0	0	0	0	0
3.2.1.1.4.11	system tests	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5	TRT- SCT in SR (1/05 - 9/05)	0	0	113	67	0	0	0	0	0	0
3.2.1.1.5.1	technical	0	0	113	18	0	0	0	0	0	0
3.2.1.1.5.2	Project Engineer(Callahan)	0	0	0	48	0	0	0	0	0	0
3.2.1.1.5.3	Technical support (Kline)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5.4	Electrical Engineer(VanBerg)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5.5	system test	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5.6	testing equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5.7	electronics tech(C. Alexander)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.5.8	Technical support (Russian)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8	ID Integration(10/05-4/07)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.1	Technical support (Duke)	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.2	Computer professional	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.3	electronics tech	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.4	electrical Engineer	0	0	0	0	0	0	0	0	0	0

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3.2.1.1.8.5	testing equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.6	beamtest and system tests	0	0	0	0	0	0	0	0	0	0
3.2.1.1.8.7	technical support (Russian)	0	0	0	0	0	0	0	0	0	0
3.2.1.2	Operations	0	0	0	0	0	0	0	0	0	0
3.2.1.2.1	Runtime activities	0	0	0	0	0	0	0	0	0	0
3.2.1.2.1.1	technical support (Russian)	0	0	0	0	0	0	0	0	0	0
3.2.1.2.1.3	computer professional	0	0	0	0	0	0	0	0	0	0
3.2.1.2.1.4	electronics technician	0	0	0	0	0	0	0	0	0	0
3.2.1.2.1.6	Testing equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.3	TRT Maintenance	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1	Shutdown maintenance	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1.1	technical support (Russian)	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1.3	Computer Professional	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1.4	electronics technician	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1.6	Testing equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.3.1.7	Maintenance equipment	0	0	0	0	0	0	0	0	0	0
3.2.1.3.2	spares	0	0	0	0	0	0	0	0	0	0
3.2.1.3.2.4	circuit board spares	0	0	0	0	0	0	0	0	0	0
3.2.2	Common TRT/ID	0	0	0	0	0	0	0	0	0	0
3.2.2.1	Pre-Operations	0	0	0	0	0	0	0	0	0	0
3.2.2.2	Maintenance and operations (IU)	0	0	0	0	0	0	0	0	0	0
3.2.2.3	Maintenance and operations	0	0	0	0	0	0	0	0	0	0
3.3	Liquid Argon M&O Estimate	0	506	564	313	160	0	0	0	0	0
3.3.1	Mechanical Liquid Argon M&O	0	305	423	233	44	0	0	0	0	0
3.3.1.1	Pre-operations and	0	0	73	136	0	0	0	0	0	0

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3.3.1.1.1	Cryostat	0	0	0	0	0	0	0	0	0	0
3.3.1.1.1.1	Cryostat documentation	0	0	0	0	0	0	0	0	0	0
3.3.1.1.2	Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.2.1	Signal Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.2.2	HV Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.2.2.1	HV Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.2.2.2	HV Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.3	Cryogenics	0	0	73	136	0	0	0	0	0	0
3.3.1.1.3.1	Cryogenics documentation	0	0	33	0	0	0	0	0	0	0
3.3.1.1.3.2	Cryogenics Commissioning	0	0	40	136	0	0	0	0	0	0
3.3.1.1.3.3	HV Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.1.1.4	Forward Calorimeter	0	0	0	0	0	0	0	0	0	0
3.3.1.1.4.1	FCAL Documentation update	0	0	0	0	0	0	0	0	0	0
3.3.1.2	Operations	0	176	97	61	0	0	0	0	0	0
3.3.1.2.1	Cryostat	0	0	0	0	0	0	0	0	0	0
3.3.1.2.1.1	Cryostat operations	0	0	0	0	0	0	0	0	0	0
3.3.1.2.2	Feedthrough	0	19	0	28	0	0	0	0	0	0
3.3.1.2.2.1	Signal Feedthroughs	0	5	0	0	0	0	0	0	0	0
3.3.1.2.2.2	HV Feedthroughs operations	0	14	0	28	0	0	0	0	0	0
3.3.1.2.3	Cryogenics	0	156	97	34	0	0	0	0	0	0
3.3.1.2.3.1	Quality Meter	0	0	0	0	0	0	0	0	0	0
3.3.1.2.3.2	Cryogenics operations	0	156	97	34	0	0	0	0	0	0
3.3.1.2.4	FCAL	0	0	0	0	0	0	0	0	0	0

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3.3.1.2.4.1	FCAL operations	0	0	0	0	0	0	0	0	0	0
3.3.1.3	Maintenance	0	129	254	36	44	0	0	0	0	0
3.3.1.3.1	Cryostat-Maintenance of	0	0	36	36	0	0	0	0	0	0
3.3.1.3.1.1	Maintenance of the mechanical	0	0	36	36	0	0	0	0	0	0
3.3.1.3.2	Feedthrough	0	0	122	0	44	0	0	0	0	0
3.3.1.3.2.1	Signal Feedthrough	0	0	48	0	20	0	0	0	0	0
3.3.1.3.2.2	HV Feedthrough Maintenance	0	0	74	0	24	0	0	0	0	0
3.3.1.3.3	Cryogenics	0	129	96	0	0	0	0	0	0	0
3.3.1.3.3.1	Quality Meters	0	50	17	0	0	0	0	0	0	0
3.3.1.3.3.2	Cryogenics Maintenance	0	79	79	0	0	0	0	0	0	0
3.3.1.3.4	FCAL	0	0	0	0	0	0	0	0	0	0
3.3.1.3.4.1	FCAL	0	0	0	0	0	0	0	0	0	0
3.3.2	Electronic Liquid Argon M&O	0	133	141	80	115	0	0	0	0	0
3.3.2.1	Pre operations and	0	133	29	26	115	0	0	0	0	0
3.3.2.1.3	System Crate Integration	0	104	0	26	115	0	0	0	0	0
3.3.2.1.3.1	Crate Documentation update	0	0	0	0	0	0	0	0	0	0
3.3.2.1.3.2	System Electronic Integration	0	0	0	0	0	0	0	0	0	0
3.3.2.1.3.3	Facilities	0	104	0	0	0	0	0	0	0	0
3.3.2.1.3.4	Systems Crate Pre-operations	0	0	0	26	115	0	0	0	0	0
3.3.2.1.3.5	System Crate pre-operations -	0	0	0	0	0	0	0	0	0	0
3.3.2.1.3.6	System Crate - Crate Burn In	0	0	0	0	0	0	0	0	0	0
3.3.2.1.4	Front End Board	0	0	0	0	0	0	0	0	0	0
3.3.2.1.4.1	Front End Board	0	0	0	0	0	0	0	0	0	0
3.3.2.1.5	Level 1 Trigger	0	0	0	0	0	0	0	0	0	0

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3.3.2.1.5.1	Level 1 Trigger documentation	0	0	0	0	0	0	0	0	0	0
3.3.2.1.5.2	System Crate pre-operations	0	0	0	0	0	0	0	0	0	0
3.3.2.1.5.3	FEB documentation update	0	0	0	0	0	0	0	0	0	0
3.3.2.1.6	ROD System	0	29	29	0	0	0	0	0	0	0
3.3.2.1.6.1	ROD Documentation update	0	0	0	0	0	0	0	0	0	0
3.3.2.1.6.2	FEB pre-operations in West	0	29	29	0	0	0	0	0	0	0
3.3.2.1.6.3	System Crate pre-operations	0	0	0	0	0	0	0	0	0	0
3.3.2.1.6.4	System crate Pre-operations	0	0	0	0	0	0	0	0	0	0
3.3.2.2	Operations	0	0	112	54	0	0	0	0	0	0
3.3.2.2.1	Motherboard System	0	0	0	0	0	0	0	0	0	0
3.3.2.2.2	Preamp/Calibration	0	0	0	21	0	0	0	0	0	0
3.3.2.2.2.1	Preamp Operations	0	0	0	21	0	0	0	0	0	0
3.3.2.2.2.2	Calibration Operations	0	0	0	0	0	0	0	0	0	0
3.3.2.2.3	System Crate	0	0	112	33	0	0	0	0	0	0
3.3.2.2.3.1	Readout electronics	0	0	112	0	0	0	0	0	0	0
3.3.2.2.3.2	Crate operations Software	0	0	0	33	0	0	0	0	0	0
3.3.2.2.3.3	BNL operations Physicist	0	0	0	0	0	0	0	0	0	0
3.3.2.2.3.5	LAr Data Base Operation	0	0	0	0	0	0	0	0	0	0
3.3.2.2.3.6	SMU Data Base Operation	0	0	0	0	0	0	0	0	0	0
3.3.2.2.4	Front End Board	0	0	0	0	0	0	0	0	0	0
3.3.2.2.4.1	FEB operations Software	0	0	0	0	0	0	0	0	0	0
3.3.2.2.5	Level 1 Trigger	0	0	0	0	0	0	0	0	0	0
3.3.2.2.5.2	Pitts operations support and	0	0	0	0	0	0	0	0	0	0
3.3.2.2.5.3	Pitts operations support	0	0	0	0	0	0	0	0	0	0
3.3.2.2.6	ROD System	0	0	0	0	0	0	0	0	0	0
3.3.2.2.6.1	ROD operations Software	0	0	0	0	0	0	0	0	0	0

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3.3.2.3	Maintenance	0	0	0	0	0	0	0	0	0	0
3.3.2.3.1	Motherboard System	0	0	0	0	0	0	0	0	0	0
3.3.2.3.2	Preamps/Calibration	0	0	0	0	0	0	0	0	0	0
3.3.2.3.2.1	Preamps/Calibration	0	0	0	0	0	0	0	0	0	0
3.3.2.3.2.2	Calibration	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3	System Crate	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3.1	Power Supply maintenance,	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3.2	Optical Links and system	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3.3	Crates maintenance	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3.4	DCS and monitoring	0	0	0	0	0	0	0	0	0	0
3.3.2.3.3.5	Electronics facility	0	0	0	0	0	0	0	0	0	0
3.3.2.3.4	Front End Board	0	0	0	0	0	0	0	0	0	0
3.3.2.3.4.1	Front End Readout Electronic	0	0	0	0	0	0	0	0	0	0
3.3.2.3.5	Level 1 Trigger	0	0	0	0	0	0	0	0	0	0
3.3.2.3.5.1	Level 1 trigger electronic	0	0	0	0	0	0	0	0	0	0
3.3.2.3.6	ROD System	0	0	0	0	0	0	0	0	0	0
3.3.2.3.6.2	ROD maintenance Stony	0	0	0	0	0	0	0	0	0	0
3.3.3	Beam Test	0	69	0	0	0	0	0	0	0	0
3.3.3.1	FCAL Hadronic Tail	0	0	0	0	0	0	0	0	0	0
3.3.3.2	Test Beam - optical links	0	0	0	0	0	0	0	0	0	0
3.3.3.3	Front-end readout	0	0	0	0	0	0	0	0	0	0
3.3.3.4	Beam test equipment	0	69	0	0	0	0	0	0	0	0
3.3.3.4.1	Crate	0	29	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.3.3.4.2	Cooling	0	23	0	0	0	0	0	0	0	0
3.3.3.4.3	Power Supplies	0	17	0	0	0	0	0	0	0	0
3.3.3.4.4	Feedthrough	0	0	0	0	0	0	0	0	0	0
3.3.3.4.5	Mother board system	0	0	0	0	0	0	0	0	0	0
3.3.3.4.6	Beam test equipment support	0	0	0	0	0	0	0	0	0	0
3.3.4	CERN living expenses	0	0	0	0	0	0	0	0	0	0
3.3.4.1	USATLAS operation/maintenance	0	0	0	0	0	0	0	0	0	0
3.3.5	CERN common costs	0	0	0	0	0	0	0	0	0	0
3.3.5.1	CERN common costs	0	0	0	0	0	0	0	0	0	0
3.4	Tile Calorimeter	0	306	266	0	0	0	0	0	0	0
3.4.1	TileCal - Specific Costs	0	258	240	0	0	0	0	0	0	0
3.4.1.1	Pre-Operations	0	258	240	0	0	0	0	0	0	0
3.4.1.1.1	Mechanical Support	0	11	0	0	0	0	0	0	0	0
3.4.1.1.1.1	Module Validation	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.1.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.1.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.1.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.1.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.1.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.4	Integration	0	11	0	0	0	0	0	0	0	0
3.4.1.1.1.4.1	ANL	0	11	0	0	0	0	0	0	0	0
3.4.1.1.1.4.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.4.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.4.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.1.4.5	UTA	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.4.1.1.2	Electrical Support	0	166	197	0	0	0	0	0	0	0
3.4.1.1.2.3	Validation, Repairs, and	0	99	88	0	0	0	0	0	0	0
3.4.1.1.2.3.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.3.2	U.Chicago	0	38	47	0	0	0	0	0	0	0
3.4.1.1.2.3.3	U. Illinois	0	45	26	0	0	0	0	0	0	0
3.4.1.1.2.3.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.3.5	UTA	0	15	15	0	0	0	0	0	0	0
3.4.1.1.2.4	Integration	0	48	84	0	0	0	0	0	0	0
3.4.1.1.2.4.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.4.2	U.Chicago	0	48	84	0	0	0	0	0	0	0
3.4.1.1.2.4.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.4.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.4.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.5	Pre-operational testing and	0	19	25	0	0	0	0	0	0	0
3.4.1.1.2.5.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.5.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.5.3	U. Illinois	0	19	25	0	0	0	0	0	0	0
3.4.1.1.2.5.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.2.5.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.1.3	Software Support	0	80	44	0	0	0	0	0	0	0
3.4.1.1.3.1	ANL	0	80	44	0	0	0	0	0	0	0
3.4.1.1.3.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.1.3.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.1.3.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.3.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.1.4	Physicist Support	0	0	0	0	0	0	0	0	0	0
3.4.1.1.4.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.1.4.2	U.Chicago	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.4.1.1.4.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.1.4.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.1.4.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.2	Operations (Beam-on)	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1	Mechanical Support	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.2.1.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2	Electrical Support	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.2.2.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3	Software Support	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.2.3.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4	Physicist Support	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.2.4.5	UTA	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.4.1.3	Maintenance (Beam-off)	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1	Mechanical Support	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.3.1.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2	Electrical Support	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.3.2.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3	Software Support	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.3.3.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4	Physicist Support	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.1.3.4.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.2	Calibration & Monitoring	0	48	25	0	0	0	0	0	0	0
3.4.2.1	Pre-Operations	0	48	25	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.4.2.1.1	ANL	0	15	8	0	0	0	0	0	0	0
3.4.2.1.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.2.1.3	U. Illinois	0	18	18	0	0	0	0	0	0	0
3.4.2.1.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.2.1.5	UTA	0	16	0	0	0	0	0	0	0	0
3.4.2.2	Operations (Beam-on)	0	0	0	0	0	0	0	0	0	0
3.4.2.2.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.2.2.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.2.2.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.2.2.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.2.2.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.2.3	Maintenance (Beam-off)	0	0	0	0	0	0	0	0	0	0
3.4.2.3.1	ANL	0	0	0	0	0	0	0	0	0	0
3.4.2.3.2	U.Chicago	0	0	0	0	0	0	0	0	0	0
3.4.2.3.3	U. Illinois	0	0	0	0	0	0	0	0	0	0
3.4.2.3.4	MSU	0	0	0	0	0	0	0	0	0	0
3.4.2.3.5	UTA	0	0	0	0	0	0	0	0	0	0
3.4.3	Tilecal System Common Costs	0	0	0	0	0	0	0	0	0	0
3.4.3.1	Operations	0	0	0	0	0	0	0	0	0	0
3.4.3.1.1	ANL	0	0	0	0	0	0	0	0	0	0
3.5	Muon - Endcap	0	0	203	203	726	373	0	0	0	0
3.5.1	MDT Pre-Operations, Operations	0	0	0	0	353	203	0	0	0	0
3.5.1.1	MDT Pre-operations	0	0	0	0	353	203	0	0	0	0
3.5.1.1.1	Setup of MDT Staging and Test	0	0	0	0	0	0	0	0	0	0
3.5.1.1.1.1	Engineering Design of MDT	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.1.1.1.1.1	Michigan	0	0	0	0	0	0	0	0	0	0
3.5.1.1.1.2	Commission MDT Test Station	0	0	0	0	0	0	0	0	0	0
3.5.1.1.1.2.1	Michigan	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2	Pre-Operations of MDT	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.1	Verify MDT Mechanical	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.1.1	Michigan - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.1.2	U. Washington/Seattle - Phase	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.2	Verify MDT Chamber	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.2.1	Michigan - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.1.1.2.2.2	U. Washington/Seattle - Phase	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3	Pre-Operations of MDT	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.1	Verify MDT Mechanical	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.1.1	Michigan - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.1.2	U. Washington/Seattle - Phase	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.1.3	Boston University - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.1.4	Harvard - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.2	Verify MDT Chamber	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.2.1	Michigan - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.2.2	U. Washington/Seattle - Phase	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.2.3	Boston - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.2.4	Harvard - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.3	BW Single Sector Test	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.3.1	Brandeis - BW Single Sector	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.3.2	Michigan - BW Single Sector	0	0	0	0	0	0	0	0	0	0
3.5.1.1.3.3.3	U. Washington/Seattle - BW	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.1.1.4	Pre-Operations of MDT	0	0	0	0	353	203	0	0	0	0
3.5.1.1.4.1	Verify MDT Mechanical	0	0	0	0	225	0	0	0	0	0
3.5.1.1.4.1.1	Brandeis University - Phase III	0	0	0	0	50	0	0	0	0	0
3.5.1.1.4.1.2	Boston University - Phase III	0	0	0	0	45	0	0	0	0	0
3.5.1.1.4.1.3	Harvard University - Phase III	0	0	0	0	45	0	0	0	0	0
3.5.1.1.4.1.4	Michigan - Phase III	0	0	0	0	42	0	0	0	0	0
3.5.1.1.4.1.5	U. Washington - Phase III	0	0	0	0	44	0	0	0	0	0
3.5.1.1.4.2	Verify MDT Chamber	0	0	0	0	127	203	0	0	0	0
3.5.1.1.4.2.1	Harvard University - Phase III	0	0	0	0	53	129	0	0	0	0
3.5.1.1.4.2.2	Michigan - Phase III	0	0	0	0	74	74	0	0	0	0
3.5.1.2	MDT Operations (Beam On)	0	0	0	0	0	0	0	0	0	0
3.5.1.2.1	MDT Mechanical Operations	0	0	0	0	0	0	0	0	0	0
3.5.1.2.1.1	Brandeis University	0	0	0	0	0	0	0	0	0	0
3.5.1.2.2	MDT Electronics Operations	0	0	0	0	0	0	0	0	0	0
3.5.1.2.2.1	Michigan	0	0	0	0	0	0	0	0	0	0
3.5.1.3	MDT Maintenance (Beam Off)	0	0	0	0	0	0	0	0	0	0
3.5.1.3.1	MDT Mechanical Maintenance	0	0	0	0	0	0	0	0	0	0
3.5.1.3.1.1	Brandeis University - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.1.3.2	MDT Electronics Maintenance	0	0	0	0	0	0	0	0	0	0
3.5.1.3.2.1	Michigan - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.1.4	MDT Spares - Mechanical and	0	0	0	0	0	0	0	0	0	0
3.5.1.4.1	MDT Mechanical Spares	0	0	0	0	0	0	0	0	0	0
3.5.1.4.1.1	Harvard University	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.1.4.2	MDT Electronics Spares	0	0	0	0	0	0	0	0	0	0
3.5.1.4.2.1	Harvard University	0	0	0	0	0	0	0	0	0	0
3.5.2	CSC Pre-Operations, Operations	0	0	0	0	108	108	0	0	0	0
3.5.2.1	CSC Pre-operations	0	0	0	0	108	108	0	0	0	0
3.5.2.1.1	Setup of CSC Staging and Test	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.1	Engineering Design of CSC	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.1.1	BNL	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.1.2	UCI	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.2	Commission CSC Test Station	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.2.1	BNL	0	0	0	0	0	0	0	0	0	0
3.5.2.1.1.2.2	UCI	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2	Pre-Operations of CSC	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.1	Verify CSC Mechanical	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.1.1	BNL - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.1.2	UCI - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.2	Verify CSC Chamber	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.2.1	BNL - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.2.1.2.2.2	UCI - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3	Pre-Operations of CSC	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3.1	Verify CSC Mechanical	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3.1.1	BNL - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3.1.2	UCI - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3.2	Verify CSC Chamber	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.2.1.3.2.1	BNL - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.2.1.3.2.2	UCI - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.2.1.4	Pre-Operations of CSC	0	0	0	0	108	108	0	0	0	0
3.5.2.1.4.1	Verify CSC Mechanical	0	0	0	0	0	0	0	0	0	0
3.5.2.1.4.1.1	BNL - Phase III	0	0	0	0	0	0	0	0	0	0
3.5.2.1.4.1.2	UCI - Phase III	0	0	0	0	0	0	0	0	0	0
3.5.2.1.4.2	Verify CSC Chamber	0	0	0	0	108	108	0	0	0	0
3.5.2.1.4.2.1	BNL - Phase III	0	0	0	0	51	51	0	0	0	0
3.5.2.1.4.2.2	UCI - Phase III	0	0	0	0	57	57	0	0	0	0
3.5.2.2	CSC Operations (Beam On)	0	0	0	0	0	0	0	0	0	0
3.5.2.2.1	CSC Mechanical Operations	0	0	0	0	0	0	0	0	0	0
3.5.2.2.1.1	BNL - Beam On	0	0	0	0	0	0	0	0	0	0
3.5.2.2.1.2	UCI - Beam On	0	0	0	0	0	0	0	0	0	0
3.5.2.2.2	CSC Electronics Operations	0	0	0	0	0	0	0	0	0	0
3.5.2.2.2.1	BNL - Beam On	0	0	0	0	0	0	0	0	0	0
3.5.2.2.2.2	UCI - Beam On	0	0	0	0	0	0	0	0	0	0
3.5.2.3	CSC Maintenance (Beam Off)	0	0	0	0	0	0	0	0	0	0
3.5.2.3.1	CSC Mechanical Maintenance	0	0	0	0	0	0	0	0	0	0
3.5.2.3.1.1	BNL - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.2.3.1.2	UCI - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.2.3.2	CSC Electronics Maintenance	0	0	0	0	0	0	0	0	0	0
3.5.2.3.2.1	BNL - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.2.3.2.2	UCI - Beam Off	0	0	0	0	0	0	0	0	0	0
3.5.2.4	CSC Spares - Mechanical and	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.2.4.1	CSC Mechanical Spares	0	0	0	0	0	0	0	0	0	0
3.5.2.4.1.1	BNL	0	0	0	0	0	0	0	0	0	0
3.5.2.4.2	CSC Electronics Spares	0	0	0	0	0	0	0	0	0	0
3.5.2.4.2.1	BNL	0	0	0	0	0	0	0	0	0	0
3.5.2.4.2.2	UCI	0	0	0	0	0	0	0	0	0	0
3.5.3	Alignment System Pre-Operations,	0	0	0	0	62	62	0	0	0	0
3.5.3.1	Alignment System	0	0	0	0	62	62	0	0	0	0
3.5.3.1.1	Pre-Ops Staging Area for	0	0	0	0	0	0	0	0	0	0
3.5.3.1.1.1	Eng. Design for Alignment	0	0	0	0	0	0	0	0	0	0
3.5.3.1.1.1.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.1.1.2	Commission Alignment Stage	0	0	0	0	0	0	0	0	0	0
3.5.3.1.1.2.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.1.2	Pre-operations of Alignment	0	0	0	0	0	0	0	0	0	0
3.5.3.1.2.1	Brandeis - Phase I	0	0	0	0	0	0	0	0	0	0
3.5.3.1.3	Pre-operations of Alignment	0	0	0	0	0	0	0	0	0	0
3.5.3.1.3.1	Brandeis - Phase II	0	0	0	0	0	0	0	0	0	0
3.5.3.1.4	Pre-operations of Alignment -	0	0	0	0	62	62	0	0	0	0
3.5.3.1.4.1	Brandeis - Phase III	0	0	0	0	62	62	0	0	0	0
3.5.3.2	Alignment System Operation	0	0	0	0	0	0	0	0	0	0
3.5.3.2.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.3	Alignment System Maintenance	0	0	0	0	0	0	0	0	0	0
3.5.3.3.1	Alignment Bars	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.3.3.1.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.3.2	Proximity Monitors	0	0	0	0	0	0	0	0	0	0
3.5.3.3.2.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.3.3	Multi-Point System (BCAM)	0	0	0	0	0	0	0	0	0	0
3.5.3.3.3.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.3.3.4	In-Plane System	0	0	0	0	0	0	0	0	0	0
3.5.3.3.4.1	Brandeis	0	0	0	0	0	0	0	0	0	0
3.5.4	Muon Endcap Common Costs	0	0	203	203	203	0	0	0	0	0
3.5.4.1	Engineering Coordination of	0	0	203	203	203	0	0	0	0	0
3.5.4.1.1	Engineering Coordination -	0	0	203	203	203	0	0	0	0	0
3.5.4.2	Muon Endcap Common Cost	0	0	0	0	0	0	0	0	0	0
3.5.4.2.1	MDT Operations Common	0	0	0	0	0	0	0	0	0	0
3.5.4.2.2	CSC-related Common	0	0	0	0	0	0	0	0	0	0
3.5.4.2.3	M&O(B) Common Cost - MIT	0	0	0	0	0	0	0	0	0	0
3.5.4.2.4	C&I(B) Common Cost - MIT	0	0	0	0	0	0	0	0	0	0
3.5.5	Monitoring & Calibration	0	0	0	0	0	0	0	0	0	0
3.5.5.1	Monitoring and Calibration	0	0	0	0	0	0	0	0	0	0
3.5.5.1.1	MDT M&C System	0	0	0	0	0	0	0	0	0	0
3.5.5.1.1.1	MDT Monitoring and	0	0	0	0	0	0	0	0	0	0
3.5.5.1.2	CSC M&C System	0	0	0	0	0	0	0	0	0	0
3.5.5.1.2.1	CSC M&C System Operation -	0	0	0	0	0	0	0	0	0	0
3.5.5.1.3	Alignment M&C System	0	0	0	0	0	0	0	0	0	0
3.5.5.1.3.1	Alignment M&C System -	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.5.5.1.4	Environmental Sensors M&C	0	0	0	0	0	0	0	0	0	0
3.5.5.1.4.1	Environmental Sensor	0	0	0	0	0	0	0	0	0	0
3.5.5.2	Muon Test Beams	0	0	0	0	0	0	0	0	0	0
3.5.5.2.1	Muon Test Beam Support -	0	0	0	0	0	0	0	0	0	0
3.5.5.2.2	Muon Test Beam Support -	0	0	0	0	0	0	0	0	0	0
3.5.5.2.3	Muon Test Beam Support -	0	0	0	0	0	0	0	0	0	0
3.5.5.2.4	Muon Test Beam UCI	0	0	0	0	0	0	0	0	0	0
3.5.5.2.5	Muon Test Beam - Tufts	0	0	0	0	0	0	0	0	0	0
3.6	Trigger/DAQ	0	90	55	93	22	0	0	0	0	0
3.6.1	Pre Operations	0	90	7	86	0	0	0	0	0	0
3.6.1.1	Supervisor Rol Builder	0	0	0	0	0	0	0	0	0	0
3.6.1.2	Communications and Travel	0	16	0	16	0	0	0	0	0	0
3.6.1.2.1	Communications and Travel	0	8	0	8	0	0	0	0	0	0
3.6.1.2.2	Communications and Travel	0	8	0	8	0	0	0	0	0	0
3.6.1.3	Programming Support	0	74	7	69	0	0	0	0	0	0
3.6.1.3.1	Programming Support	0	74	7	58	0	0	0	0	0	0
3.6.1.3.2	Programming Support	0	0	0	11	0	0	0	0	0	0
3.6.1.4	Equipment	0	0	0	0	0	0	0	0	0	0
3.6.1.4.1	Equipment ANL	0	0	0	0	0	0	0	0	0	0
3.6.1.4.2	Equipment MSU	0	0	0	0	0	0	0	0	0	0
3.6.2	Operations	0	0	47	8	22	0	0	0	0	0
3.6.2.1	Supervisor Rol Builder	0	0	47	0	0	0	0	0	0	0
3.6.2.1.1	Supervisor Rol Builder	0	0	30	0	0	0	0	0	0	0
3.6.2.1.2	Supervisor Rol Builder	0	0	18	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.6.2.2	Communications and Travel	0	0	0	8	22	0	0	0	0	0
3.6.2.2.1	Communications and Travel	0	0	0	8	0	0	0	0	0	0
3.6.2.2.2	Communications and Travel	0	0	0	0	8	0	0	0	0	0
3.6.2.2.3	Communications and Travel	0	0	0	0	8	0	0	0	0	0
3.6.2.2.4	Communications and Travel	0	0	0	0	7	0	0	0	0	0
3.6.2.3	Programming Support	0	0	0	0	0	0	0	0	0	0
3.6.2.3.1	Programming Support	0	0	0	0	0	0	0	0	0	0
3.6.2.3.2	Programming Support	0	0	0	0	0	0	0	0	0	0
3.6.2.3.3	Programming Support	0	0	0	0	0	0	0	0	0	0
3.6.2.3.4	Programming Support	0	0	0	0	0	0	0	0	0	0
3.6.2.4	Test facilities	0	0	0	0	0	0	0	0	0	0
3.6.2.4.1	Test Facilities	0	0	0	0	0	0	0	0	0	0
3.6.2.4.2	Test Facilities	0	0	0	0	0	0	0	0	0	0
3.6.3	CERN Common Costs	0	0	0	0	0	0	0	0	0	0
3.7	Common Funds	0	0	0	0	0	0	0	0	0	0
3.7.1	Common Funds (BNL)	0	0	0	0	0	0	0	0	0	0
3.7.2	Common Funds (Nevis)	0	0	0	0	0	0	0	0	0	0
3.8	Outreach	0	0	0	0	0	0	0	0	0	0
3.9	Program Management	0	0	0	0	0	0	0	0	0	0
3.9.1	Program Management	0	0	0	0	0	0	0	0	0	0
3.9.2	Program Management	0	0	0	0	0	0	0	0	0	0
3.10	Technical Coordination	0	0	0	0	0	0	0	0	0	0
3.10.1	ATLAS Access	0	0	0	0	0	0	0	0	0	0
3.10.1.1	Access Equipment	0	0	0	0	0	0	0	0	0	0
3.10.1.2	Access and Interface Beam and	0	0	0	0	0	0	0	0	0	0

WBS Number	Description	FY 03 (k\$)	FY 04 (k\$)	FY 05 (k\$)	FY 06 (k\$)	FY 07 (k\$)	FY 08 (k\$)	FY 09 (k\$)	FY 10 (k\$)	FY 11 (k\$)	FY 12
3.10.2	Maintenance of Movement System	0	0	0	0	0	0	0	0	0	0
3.10.2.1	Movement System Control	0	0	0	0	0	0	0	0	0	0
3.10.3	Configuration Control Envelope	0	0	0	0	0	0	0	0	0	0
3.10.3.1	Configuration Control	0	0	0	0	0	0	0	0	0	0
3.10.3.2	Configuration Control @ CERN	0	0	0	0	0	0	0	0	0	0
3.10.3.3	EC Muons Configuration	0	0	0	0	0	0	0	0	0	0
3.10.4	Installation and Maintenance Data	0	0	0	0	0	0	0	0	0	0
3.10.4.1	Installation Data Base	0	0	0	0	0	0	0	0	0	0
3.10.4.2	Installation Data Base @ CERN	0	0	0	0	0	0	0	0	0	0
3.10.5	TC Project Office	0	0	0	0	0	0	0	0	0	0